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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT PAPER NUMBER

1755

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,206

Applicant(s)

SMALL ET AL.

Examiner

Michael A. Marcheschi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 77-106 and 108-139 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 77-106 and 108-139 is/are rejected.
- 7) ☒ Claim(s) 90,91 and 106 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 94-106, 108-113, 117-125, 128 and 139 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new matter added to independent claim 94 is the limitations “pH 1 to less than pH 2” and “pH 5 to about 10” because the original specification never literally defines both of these pH range limitations, for the broad composition, before. See section [0011] of the instant specification.

The new matter added to independent claims 112 and 118 is the limitation “optionally, an electrolyte” as defined by component (6) of the claims, because this component was never literally defined **before for use in the broad composition**. Although a electrolyte is supported, it is only supported for a specific composition and not the broad composition as claimed (see composition O). In addition, the use of this specific component is only supported for polishing **platinum and not** for polishing all noble metals (i.e. the specification only supports this component in platinum polishing composition).

The limitation defined in claim 122 new matter because this suspension agent was never literally defined **before for use in the broad composition** as defined in claim 118. Although this suspension agent is supported, it is only supported for a specific composition and not the

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broad composition as claimed (see composition E). In addition, the use of this specific component is only supported for polishing **Ir** and **not** for polishing all noble metals (i.e. the specification only supports this component in Ir polishing composition).

The limitation defined in claim 123 new matter because this suspension agent was never literally defined **before for use in the broad composition** as defined in claim 118. Although this suspension agent is supported, it is only supported for a specific composition and not the broad composition as claimed (see composition F). In addition, the use of this specific component is only supported for polishing **Ir** and **not** for polishing all noble metals (i.e. the specification only supports this component in Ir polishing composition).

The limitation defined in claim 124 new matter because this suspension agent was never literally defined **before for use in the broad composition** as defined in claim 118. Although this suspension agent is supported, it is only supported for a specific composition and not the broad composition as claimed (see composition G). In addition, the use of this specific component is only supported for polishing **Ir** and **not** for polishing all noble metals (i.e. the specification only supports this component in Ir polishing composition).

The limitation defined in claim 125 new matter because this suspension agent was never literally defined **before for use in the broad composition** as defined in claim 118. Although this suspension agent is supported, it is only supported for a specific composition and not the broad composition as claimed (see composition H). In addition, the use of this specific component is only supported for polishing **Ir** and **not** for polishing all noble metals (i.e. the specification only supports this component in Ir polishing composition).

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The limitation defined in claim 128 new matter because this suspension agent was never literally defined **before for use in the broad composition** as defined in claim 118. Although this suspension agent is supported, it is only supported for a specific composition and not the broad composition as claimed (see composition J). In addition, the use of this specific component is only supported for polishing **Ir** and **not** for polishing all noble metals (i.e. the specification only supports this component in Ir polishing composition).

The selectivity ratio of claim 139 is new matter because the specification never literally defines “about 1:1

The other claims are dependent on rejected claims.

If the examiner is in error with respect to the above new matter situations, applicants are requested to define clear pages and lines where these limitations can be found for the broad composition.

Claims 89, 94-106 and 108-111 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 94 is indefinite as to the phrase “said composition having a pH selected from a group consisting of a pH from about pH 1 to less than pH 2 and a pH from above pH 5 to about pH 10” because this phrase is not defined in a clear and concise manner. The phrase does not clearly define the pH ranges and therefore should be rewritten (i.e. wherein said composition has a pH of 1 to less than pH 2 or a pH of above 5 to about 10).

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Claims 89 and 105 are indefinite as to the limitation “carbide” because the examiner is unclear as to what the carbide is (i.e. carbide of what metal).

The other claims are indefinite because they depend on indefinite claims.

Claims 90, 91 and 106 are objected to because of the following informalities:

The claims are objected to as to the multiple dependent language. Although this language is understood to be defining the dependency in alternative language, it is strongly suggested that the claims be amended to set forth the language “any one of claims...” so as to clearly define the claim dependencies in alternative form.

Appropriate correction is required.

ART REJECTION :

Claims 77-106, 108-120, 122 and 125-139 are rejected under 35 U.S.C. 103(a) as obvious over Brusic et al. alone or in view of Fang (227) and Dirksen et al.

Brusic et al. teach in the abstract and column 3, line 36-column 7, line 20, a polishing composition for polishing a substrate having a noble metal feature thereon (substrate can also include a dielectric material), said composition has the claimed pH and comprises an abrasive, and periodic acid. Various other components can be used (i.e. an organic acid, etc.). The amounts for the abrasive and periodic acid are defined. The abrasive can be a mixture of abrasives.

The teachings of the secondary references are defined in the previous office action which is incorporated herein by reference.

The primary reference teaches amounts for the periodic acid and it is the examiners position that when said amounts are calculated in terms of moles/kg, said amounts will encompass the claimed amounts. If applicants wish to argue the claimed amounts, burden is upon applicants to show the contrary to the above statement (i.e. show that the reference range is not within the range of the claimed amounts). This reference also defines amounts for the components and it is the examiners position that the combined amounts defined by the reference will render a substrate substantially planar, thus making this limitation obvious. In view of this, no patentable distinction is seen to exist between the reference composition and the claimed composition in the absence of any evidence showing the contrary. With respect to the characteristics (claims 92, 93, 94, 108, 138 and 139), since the composition is the same, these characteristics are expected and therefore obvious because the same polishing composition is expected to provide the same polishing characteristics to a substrate upon polishing. The primary reference teaches a pH of the composition and one skilled in the art would have found the adjustment of said pH obvious if the initial composition did not have the required pH and/or if a different pH was desired. This concept is clearly within the level of ordinary skill in the art and therefore the use of any pH adjusting material is also within the level of the skilled artisan. In the alternative, the primary reference teaches a pH of the composition and one skilled in the art would have found the adjustment of said pH obvious, which is clearly shown by Fang, in order to produce a polishing composition having a specific pH. In other words, the use of a pH adjustor is well within the level of ordinary skill in order to produce a composition having the desired pH. Finally, with respect to the organic acid and surfactant, the primary references teaches that organic acid can be used. With respect to the surfactant, the reference teaches

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various other components that can be used and it is the examiners position that at least one of the reference components can function as a surfactant, thus making this limitation obvious. In the alternative, it is the examiners position that use of conventional polishing additives, such as a surfactant and an organic acid, would have been well within the level of ordinary skill in the art. These conventional additives for noble metal polishing compositions are clearly shown by Dirksen et al. The surfactant will optimize the dispersion by making a more homogeneous dispersion, thus its use is motivated by the beneficial results obtained (optimization of dispersion).

With respect to the polishing rate, it is the examiners position that since the composition is the same (can contain all of the claimed components), this aspect is expected and therefore obvious because the same composition used in the same manner (polishing noble metals) is expected to function in the same manner absent clear evidence to the contrary. With respect to the suspension agent (surfactant), the reference teaches various other components that can be used and it is the examiners position that at least one of the reference components can function as a surfactant, thus making this limitation obvious. With respect to the suspension agent of claim 122, the reference teaches that alumina is used, in admixture with another alumina abrasive (see column 5, lines 40+) and this makes the claimed limitation obvious because (1) fumed alumina is a colloidal form of alumina, thus broadly reading on the claimed material and (2) notwithstanding the fumed alumina, alpha alumina is used and it is the examiners position that since **“a generic disclosure renders a claimed species prima facie obvious”**, this makes the colloidal form of alumina obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971). With respect to the suspension agent of

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claim 125, the reference teaches that silica is used, in admixture with an alumina abrasive and this makes the claimed limitation obvious because “a **generic disclosure renders a claimed species prima facie obvious**”, thus making the colloidal form of silica obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971). With respect to the suspension agent of claim 128, the reference teaches that a carboxylic acid can be used and since succinic acid is a carboxylic acid, this aspect is obvious because “a **generic disclosure renders a claimed species prima facie obvious**”. With respect to the alumina forms of claims 136 and 137, since alumina is used this reads on any alumina form and since the reference explicitly defines the use of two alumina materials, it is the examiners position that the fumed alumina component can exist in the gamma form, thus making this limitation obvious absent evidence to the contrary (since the form of fumed alumina is not defined this implies any and all forms). With respect to the “consisting essentially of” language, although the reference might contain other components, it is the examiners position that these components will not materially effect the basic and novel properties of the composition and thus are still within the scope of the claims. Applicants must show clear evidence as to why the additional components are not within the scope of the claimed language.

Applicant's arguments filed 7/8/05 have been fully considered but they are not persuasive.

Applicants argue that Brusich does not teach the claimed invention because the reference does not define the polishing rate. Although the reference is silent as to this, it is the examiners

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position that since the composition is the same (can contain all of the claimed components), this aspect is expected and therefore obvious because the same composition used in the same manner (polishing noble metals) is expected to function in the same manner absent clear evidence to the contrary. Applicants have not shown clear evidence to rebut this (i.e. reference composition will not result in the claimed rate). To support applicants position, they refer to the examples but as is well established, **"a reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments"** See *In re Van Marter*, 144 USPQ 421.

Applicants also appear to argue Dirksen alone, but this reference has not been used as a primary reference but as a secondary reference in combination with a primary reference. Finally, applicants argue that "consisting essentially of" language excludes any additional components defined by Brusic. "Consisting essentially of" only excludes components which materially effect the basic and novel properties of the composition. It is the examiners position that the additional components of the above reference will **not** materially effect the basic and novel properties of the composition and thus are still within the scope of the claims. **Applicants must show clear evidence as to why the additional components are not within the scope of the claimed language.**

The examiner withdraws the previous rejections based on (1) Shemo et al. (831), (2) Shemo et al. (774), (3) Fang (227) , (4) Streinz et al. (686), (5) Kaufman et al. (306) and (6) Tredinnick (460) since these reference are silent with respect to noble metals.

The examiner withdraws the previous rejections based on Moeggenborg et al., as the primary reference, because this rejection is no better than the rejection applied. However, the examiner reserves the right to reinstate this rejection if needed.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ

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545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356. To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside (i.e. as well as the upper and lower limits) the claimed range to show the criticality of the claimed range. *In re Hill* 284 F.2d 955, 128 USPQ 197 (CCPA 1960).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9/05

Michael A Marcheschi

**MICHAEL MARCHESCHI
PRIMARY EXAMINER**